associated with care coordination's effect on cardiovascular disease (CVD) risks to identify geographic areas that may benefit from supplementary clinic-community linkages. METHODS/STUDY POPULATION: We analyzed data with geocoded residential addresses and data from electronic health records for 9946 adults from a Centers for Medicare & Medicaid Services funded innovation project from 7/1/2013 to 3/30/2015. Variables included patient-level demographics, Elixhauser comorbidity index, total time with a nurse care manager, and neighborhood factors such as poverty indicators, walkability, and social capital index. Outcomes were change in CVD risk factors, hemoglobin A1C, blood pressure (BP), and low-density lipoprotein (LDL). Generalized linear models were used to assess the effect of nurse care management program on outcomes after controlling for confounding factors. RESULTS/ANTICIPATED RESULTS: We report preliminary models that include patient demographics (age, sex, race), health care utilization, nurse care manager contact time, Elixhauser comorbidity index, neighborhood education status, percent of population below 200% federal poverty level, median home value, walkability score of the residential address, and social capital index. After adjusting for all mentioned variables, in adults with HbA1C more than 7.5% at baseline, females had worsening HbA1C by 0.53% over the study period. Additionally, LDL values in females worsened over the study period by 4.8 mg/dL after adjusting for all variables. No clinically significant changes were noted for BP. DISCUSSION/SIGNIFICANCE OF IMPACT: Women's HbA1C and LDL worsened despite nurse care management and may benefit from additional community-based interventions or interventionists. In future analyses, we anticipate that CVD risk will worsen for patients with higher fast food proximity and with greater geographic distance from their PCP.

4556

Gender homophily in translational collaborations; a network analysis study of investigators at one academic medical center

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OBJECTIVES/GOALS: Collaborations are at the core of translational science and team science. Differences by gender have been identified in various research contexts from recruitment to retention to promotion. This study assesses the relational associations of translational collaborations, and what role of gender. METHODS/STUDY POPULATION: In 2011 and 2013, clinical and basic sciences investigators at University of Rochester School of Medicine and Dentistry responded to an online survey nominating their research collaborators. Two study years were merged, and name lists were transformed into a collaboration network. Departments were classified into basic sciences (e.g. biochemistry) and clinical (e.g. urology). If respondent and partner were affiliated to different department classes, the collaboration was defined as translational. Multi-level GLM models were developed to assess the associates of the likelihood of translational vs. within discipline collaborations. Partner nominations were nested in respondents. RESULTS/ANTICIPATED RESULTS: 202 respondents were included in the multi-level GLM models. A collaboration was more likely to be translational if the respondent shared more collaborators with the partner (OR:1.13), and respondent was a central actor in collaboration network (OR: 1.2). Translational collaborations were less likely to be reported by clinicians (OR: 0.25). In the model to assess gender match, a collaboration was more likely to be translational if the respondent was male, and nominated a male partner. For both genders, collaboration with a partner of the opposite gender was more likely to be translational if respondent had more shared collaborators with the partner. DISCUSSION/SIGNIFICANCE OF IMPACT: Translational collaborations happen in teams. Gender homophily exits in translational collaborations, and is reduced by shared collaborators; implying the effect of personal connections and community membership. Community-building interventions may increase diversity in translational collaborations.

4203

Re-engineering the Approach to Extremely Preterm Breech Deliveries with Student Led Team Science

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OBJECTIVES/GOALS: Vaginal delivery is typically avoided in extremely preterm breech fetuses due to the concern for head entrapment by the cervix. Development of a device to prevent head entrapment would be best addressed by a multidisciplinary approach incorporating engineering principles with clinical obstetrics. METHODS/STUDY POPULATION: Construction of a collaborative multidisciplinary team to address the clinical challenge of preventing head entrapment was initiated through a unique course at the Massachusetts Institute of Technology (Course 2.75, Medical Device Design). The course would provide a structured means by which students (senior undergraduate and graduate students in Mechanical Engineering) would be paired with a clinical advisor and faculty in their department. Weekly team meetings were scheduled to review the clinical context pertinent to the problem and review engineering principles needed to develop a solution. The course also provided a small monetary budget ($4K) for the students to purchase supplies. RESULTS/ANTICIPATED RESULTS: During the semester long course, several iterations of a prototype were designed. Each subsequent rendition was evaluated from both an engineering and manufacturing perspective, as well as clinical appropriateness. The weekly meetings allowed for rapid re-design and assured that all necessary parameters were considered by the entire team. Students also had access to lab facilities and additional mentorship that allowed for supplementary input beyond that generated by core team members. These interactions, along with those of their classmates working on other projects, provided a strong base for exploring subsequent device development. DISCUSSION/SIGNIFICANCE OF IMPACT: Successful medical device development requires a collaborative process and students can be ideal members of these teams as they reside in an environment that is conducive to exploration and novel idea generation. Course-based student led team science platforms can provide an excellent foundation for solving uniquely challenging medical problems.

4319

Team Science in Parkinson's Research: Connecting Clinicians and Computational Teams

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OBJECTIVES/GOALS: This team science pilot program aims to elevate the quality of Parkinson's disease modeling initiatives by

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strengthening connections between clinical researchers and computational teams. As many data science projects in Parkinson's research would benefit from deeper clinical expertise, many clinical engagements would be improved by upfront integration of computational requirements. These team science programs, developed from design thinking methodologies, provide structured, sustainable, and scalable means for multi-disciplinary teams to come together and co-create translational science in PD. METHODS/STUDY POPULATION: Design Thinking (DT) could help yield an effective learning experience. DT is grounded in ethnographic research strategies and prototyping, relying heavily on grantee interviews and feedback. This approach is commonly used to navigate and design amidst complexity; its applications range from product to healthcare to instructional design. The following is an overview of the process as applied to this project: *Discover*: Once the core team (MJFF and project designers) has refined the key question they would like to answer, the team will begin gathering both primary and secondary data. This phase may include focus groups, one-on-one interviews, expert interviews, and immersive data-gathering. The purpose of this phase is to capture complexity and lay the groundwork to understand grantees' perspectives and lexicon around their work. The deliverables of this phase are primarily unstructured research findings, such as transcribed interviews and secondary sources. *Define*: When sufficient data has been gathered, the core team will move into an initial round of synthesis and sense-making (making connections and assumptions to explain emerging themes in the data). This phase may include one to two in-person engagements with the core team. The purpose of this phase is to define the guiding principles for subsequent prototypes. It will also help reveal potential opportunity areas, both latent or apparent. The deliverables of this phase are agreed upon key themes, insights, and an informed "How Might We" question that will anchor the ideation process. *Develop*: Armed with informed themes, the core team will begin to brainstorm potential solutions. Following a set of brainstorming techniques, they will initially aim for quantity versus quality in order to allow potentially innovative and/or risky solutions to surface. Eventually, these ideas will be distilled into three robust and unique prototypes. Like the prior phase, ideation may also require one to two in-person engagements. The deliverables here are three unique prototypes; the reason for three is the ensure that the team does not anchor themselves in just one solution, but rather remains in an exploratory mindset as they solicit feedback on these prototypes from the grantees. *Deliver*: In this final phase, the core team revisits the grantees and presents the three prototypes. This phase may include conducting three small-scale pilots or simply just explaining the prototypes. Either way, it is important to solicit another round of feedback to ensure the solutions are indeed addressing the needs and context of grantees. Once completed, the core team will iterate a final pilot design and identify any remaining questions and assumptions they would like the pilot to inform. RESULTS/ANTICIPATED RESULTS: The team science pilot identifies five main opportunities to tighten collaboration, communication, and expectations across clinical and computational teams. Firstly, in-person events, held regularly in a central location, can act as an incubating space for these teams to partner, ideate, and pitch for grant funding. Secondly, co-developed guidelines for research questions would ensure consistent availability of clinically-relevant, computationally-feasible research topics. Thirdly, increasing the presence of Parkinson's cohort data resources at computational conferences could introduce more diverse data and genetics interest in Parkinson's research. Fourthly, a standard suite of research-facing, educational content (focused on both disease background and data basics) would ensure a strong baseline and launch-pad for PD modeling projects. Lastly, a fellowship program focused on early-stage researchers could establish a unique foundation to ground both clinical and computations fellows to collaboratively work on PD research as well as iterate on the aforementioned solutions. DISCUSSION/SIGNIFICANCE OF IMPACT: This team science program has the potential to upend collaborative silos in Parkinson's research, accelerating disease modeling projects which otherwise stagnate or over-emphasize clinical v. computational aspects. By more effectively connecting team members with diverse backgrounds across clinical and computational roles, PD disease patterns can be discovered and validated ultimately resulting in improved patient care and therapeutic development. CONFLICT OF INTEREST DESCRIPTION: Several authors are staff members at The Michael J. Fox Foundation for Parkinson's Research, the sponsor of this Team Science grant. All author and non-author contributors are grant recipients from The Michael J. Fox Foundation.

4169

The influence of serious mental illness on medical care of patients with lower back pain in the emergency department

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OBJECTIVES/GOALS: To determine whether length of stay (LOS) and opioid prescribing differ among patients who present to the emergency department (ED) with low back pain (LBP) and serious mental illness (SMI+) compared to patients without SMI (SMI−). METHODS/STUDY POPULATION: Eligible patients that visited the ED within the Mount Sinai Health Care System from 2016-2019 were identified from the Mount Sinai Data Warehouse. Data on patient demographics, number of medications prescribed, and length of stay (LOS) were compared between the groups. Patients were excluded if English was not their primary language and if the LOS exceeded 24 hours. The final dataset consisted of 940 patients (SMI+: n = 181; SMI−: n = 759). RESULTS/ANTICIPATED RESULTS: SMI+ cases included patients with a diagnosis of depression (n = 152), anxiety (n = 134), schizophrenia (n = 9), bipolar (n = 1), and/or post-traumatic stress disorder (n = 33); 26% of cases had a single diagnosis, 66% with two, and the remaining 8% had three diagnoses. There was no significant difference in pain scores between the two groups (SMI-: 7.0 ± 0.1; SMI+: 6.8 ± 0.3; $p = 0.6$). We found no significant differences in LOS between the groups (SMI-: 3.9 ± 0.1 hours; SMI+: 3.8 ± 0.2 hours; $p = 0.8$), nor was there a significant difference in number of medications prescribed (SMI-: 1.7 ± 0.9; SMI+: 1.7 ± 0.6; $p = 0.4$). Further analysis revealed that the odds of receiving an opiate prescription in the SMI- group was 0.92 (95% CI: 0.54,1.55). DISCUSSION/SIGNIFICANCE OF IMPACT: Comparable opioid prescribing and LOS exist in patients with and without serious mental illness who are seeking treatment for low back pain in the ED. Despite similarities in approaches to care, more information is needed to determine if other social determinants influence these practices.

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